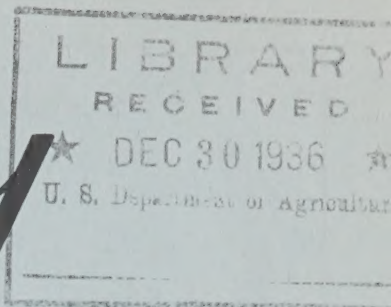


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Colorado

Barberry Eradication



in
COLORADO



Thorns Three in a Place... Prickly-edged Leaves...
Berries in Bunches... Inner Bark and Roots Yellow...
IT'S A RUST-SPREADING BARBERRY!

BARBERRY ERADICATION
IN
COLORADO

A Circular Letter for Colorado
boys and girls who are interested
in Black Stem Rust Control

Issued by

Division of Plant Disease Control
Bureau of Entomology & Plant Quarantine
U. S. Department of Agriculture
Box 276, College of Agriculture
Ft. Collins, Colorado

E. A. Lungren, Associate Pathologist
In Charge of Barberry Eradication

Warm Damp Weather Favors Rust

All plants need moisture, light, plant food, and favorable temperature in which to grow. Stem rust of wheat, oats, barley, and rye is no exception. It is a tiny fungus plant that grows on the leaves of the barberry early in the spring, spreading to the grain crops as they develop. The fungus reproduces by means of small dust-like particles, called spores. These function in a manner similar to seeds of the larger plants.

When the grain plants ripen, the rust fungus also prepares for the winter by producing dark-brown spores which lie dormant on old straw, stubble, and wild grasses until spring. During the first warm days, however, these winter spores germinate and produce much smaller colorless spores, many of which are discharged into the surrounding air. These tiny spring spores can attack only the leaves of certain kinds of barberry bushes. On the barberry leaves another crop of spores is produced which in turn infects the growing grain plants. Thus the diseased leaves of common barberry bushes become a source of rust infection to the growing grain crops.

Rust Injures Quality Of Grain Crops

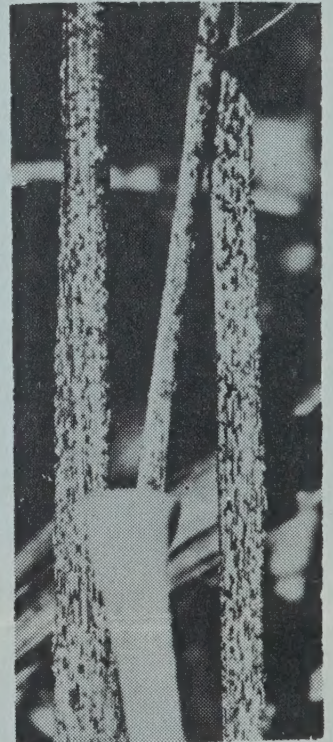
If stem rust appears in a field of wheat, oats, barley, or rye about the time the grain begins to head, and the spread of the fungus is hastened by warm damp weather, the crop may be so severely damaged that it is not worth harvesting.

During May and June, rust spores will germinate on a grain plant, grow to maturity, and produce a new crop of spores in 6 to 10 days. Thus the summer stage of the disease may spread rapidly from plant to plant, from field to field, and even from one county or State to another.

Badly rusted grain fields produce light-weight shriveled kernels that are unfit for milling purposes. Preventing the disease thus helps to lower the cost of production by increasing yields per acre and protecting the quality of the harvested grains.

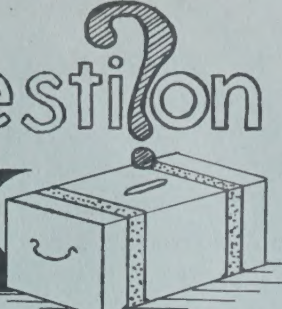
There is little that is new about the part the common barberry plays in the spread of stem rust. Each bush destroyed means

one less source from which local stem-rust epidemics may develop. If a single barberry is left growing in your community, the seed it produces may result in thousands of wild bushes along stream banks, in timbered areas, and on other uncultivated lands. That is why boys and girls, as well as grown people, are encouraged to report the location of any barberry bushes known to them.



Stem rust on wheat

The Question BOX

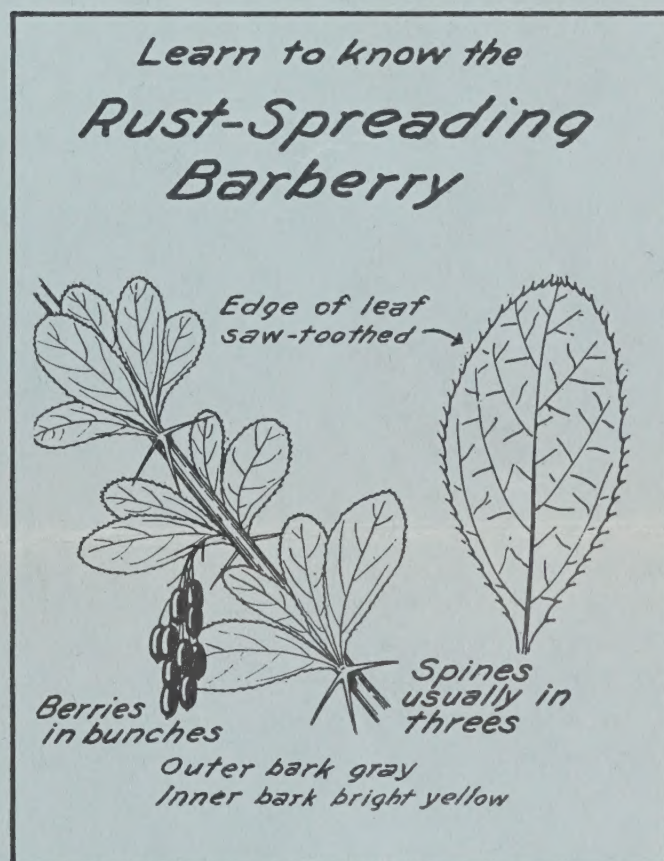


- Q. Is there a cure for stem rust once it appears in grain fields?
- A. No. Stem rust must be prevented, as very little can be done to retard its spread once it becomes prevalent in a field of grain.
- Q. Is there a law against nurserymen selling Japanese barberry?
- A. No. All varieties of Japanese barberry are highly resistant or immune to attack by stem rust and may be planted where desired without endangering grain crops.
- Q. If a boy or girl reports the location of some rust-spreading barberry bushes, will the owner of the property be fined?
- A. No fine is imposed when barberry bushes are found growing on private property. It is, however, extremely important that all known rust-spreading barberry bushes be destroyed just as soon as possible.
- Q. Do boys or girls who report more than one property having barberry bushes receive more than one award?
- A. Yes. The Rust Prevention Association presents a silver medal for the 3rd report, and a gold medal for the 5th report. There are also awards for the 2nd and 4th reports.
- Q. Are there other agricultural practices besides the eradication of barberry bushes that will help in reducing rust damage?
- A. Yes. (1) Planting rust-resistant varieties of grain; (2) sowing early-maturing varieties of grain; and (3) planting grain crops early on well-prepared and well-drained soil.

Rust-spreading Barberry Easily Recognized

The rust-spreading barberry, brought from Europe to America by the New England Colonists, was carried westward by pioneers who did not know that a destructive disease of wheat, oats, barley, and rye lived on its leaves during the early spring months. Birds ate the berries produced on the few bushes planted in Colorado and scattered seed to woodlots, stream banks, pastures, and other uncultivated lands. Now barberries are found growing wild in many parts of the State.

An average-sized bush is from 5 to 6 feet tall; the young plants of course are smaller, and the very old ones may be 10 to 12 feet high. The following cut shows how to distinguish common barberries from other shrubs.



I M P O R T A N T

Inspect your home property carefully for plants that have leaves, thorns, berries, and bark like the one shown in the diagram. There may be several barberry bushes growing in your community.

Prizes Offered For Barberry Reports

The Conference for the Prevention of Grain Rust, with headquarters at Minneapolis, Minnesota, will present a medal like the one pictured below to any boy or girl who reports the location of one or more rust-spreading barberry bushes. If you know where there are some barberries, write a letter to E. A. Lungren, College of Agriculture, Box 276, Ft. Collins, Colorado, and tell him about them. With your letter send a twig of the suspected bush, and be sure to include your name and address.



Thousands of boys and girls in Colorado have become members of the NATIONAL RUST BUSTERS' CLUB. You too can join and obtain a membership pin by writing to Mr. Lungren and telling him that you have studied about stem rust and that you are going to watch for barberry bushes.

"Champion Rust Buster" is the title Michigan has given to Donald Tuttle, 15, of Bay City. He has reported 13 different properties on which common barberries were growing. Don is a regular naturalist and has a large collection of plants as well as insects.

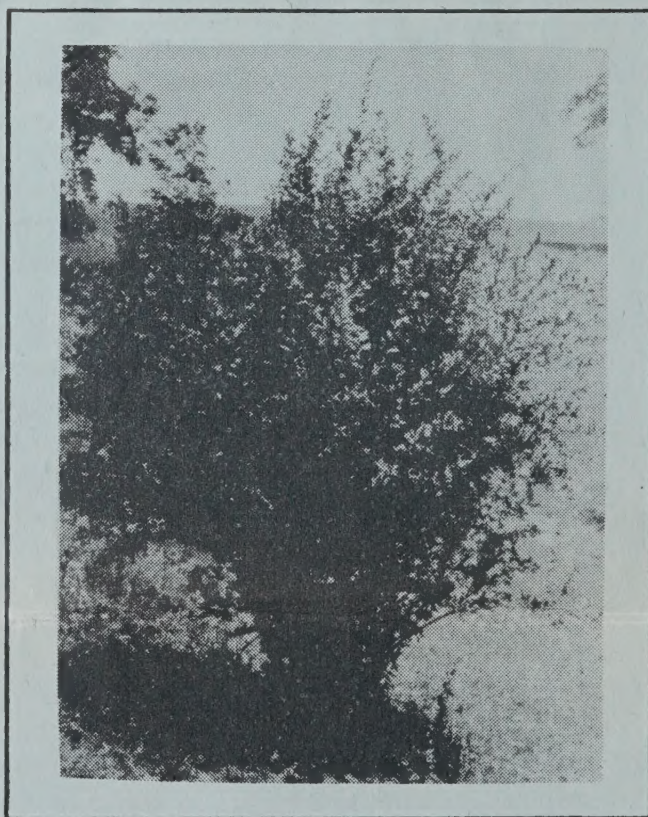
According to Mr. Donald G. Fletcher, 300 Lewis Bldg., Minneapolis, Minn., who is executive secretary of the Conference for the Prevention of Grain Rust, more than 3,200 boys and girls in 13 North Central States have been awarded medals for finding and reporting barberry bushes.

Facts To Remember About Stem Rust

Stem rust is a tiny plant that depends for its living upon food taken from the leaves of barberry bushes in the spring and from the stems and leaves of grain plants during the summer.

The dust-like particles that appear on the stems of grain infected with rust are the spores which, under favorable moisture and temperature conditions, will produce other tiny rust plants.

To protect future Colorado grain crops from stem-rust epidemics, every rust-spreading barberry should be destroyed.



Typical Common Barberry Bush

Barberry bushes are found in Colorado both in the irrigated and dry-land sections. Many bushes have been reported by school children who live in eastern Colorado. In fact the only 100-percent school (every student found a barberry) in Colorado is not in the irrigated section but near Kiowa, Colorado.